

Application No.: 09/827,942
Amendment Dated September 6, 2007
Reply to Office Action of June 8, 2007

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Amendments to the Claims: This listing of claims will replace all prior versions, and listings, of claims in the application

Listing of Claims:

1. (Currently Amended) A method of correcting erroneous image signals from a multicolor pixel array, the method comprising the steps of:
providing a high signal and a low signal based on an image signal of a previously processed pixel of the multicolor pixel array, the previously processed pixel having a single color designation, said image signal of said previously processed pixel being an image signal from a set of image signals that represents a single captured image of a scene of interest, said high signal and said low signal defining a signal range about said image signal of said previously processed pixel; and
digitizing an analog signal of a current pixel of the multicolor pixel array, which has the same single color designation as the previously processed pixel, using said high and low signals as references to derive a digitized signal of said current pixel within said signal range, including limiting said analog signal of said current pixel by said high and low signals, said analog signal of said current pixel being another image signal from said set of image signals.
2. (Original) The method of claim 1 further comprising a step of converting said image signal of said previously processed pixel to said high signal and said low signal.
3. (Original) The method of claim 2 wherein said step of converting said image signal of said previously processed pixel includes digital-to-analog converting said image signal of said previously processed pixel to said high signal and said low signal, wherein said high and low signals are voltages.
4. (Previously Presented) The method of claim 1 further comprising a step of comparing said analog signal of said current pixel with an analog signal of an other previously processed pixel, said analog signal of said other previously processed pixel being an other image signal from said set of image signals.
5. (Previously Presented) The method of claim 4 further comprising a step of converting said image signal of said previously processed pixel to said high signal and said low signal, wherein said high and low signals are dependent on said comparing of said analog signal of said current pixel with said analog signal of said other previously processed pixel.
6. (Original) The method of claim 1 wherein said step of digitizing said analog signal of said current pixel includes utilizing a flash analog-to-digital converter for said digitizing.

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7. (Previously Presented) The method of claim 1 further comprising a step of adding a conversion signal to said digitized signal of said current pixel, said conversion signal being a digitized image signal of said previously processed pixel.

8. (Original) The method of claim 1 wherein said image signal of said previously processed pixel is a digital signal, and wherein said image signal has more bits than said digitized signal of said current pixel.

9. (Currently Amended) A system for correcting erroneous image signals from a multicolor pixel array, the system comprising:

means for outputting a high signal and a low signal based on an image signal of a previously processed pixel of the multicolor pixel array, the previously processed pixel having a single color designation, said image signal of said previously processed pixel being an image signal from a set of image signals that represents a single captured image of a scene of interest, said high signal and said low signal defining a signal range about said image signal of said previously processed pixel; and

an analog-to-digital converter having a high reference input and a low reference input to receive said high signal and said low signal, said analog-to-digital converter being configured to digitize an analog signal of a current pixel of the multicolor pixel array, which has the same single color designation as the previously processed pixel, using said high and low signals as references to derive a digitized signal of said current pixel within said signal range such that said analog signal of said current pixel is limited, said analog signal of said current pixel being an other image signal from said set of image signals.

10. (Original) The system of claim 9 wherein said outputting means includes a digital-to-analog converter to generate said high and low signals from said image signal of said previously processed pixel.

11. (Original) The system of claim 10 wherein said digital-to-analog converter is configured to convert an input digital signal having more bits than said digitized signal of said current pixel.

12. (Previously Presented) The system of claim 11 wherein said digital-to-analog converter is a ten bit digital-to-analog converter, and wherein said analog-to-digital converter is a seven bit analog-to-digital converter.

13. (Previously Presented) The system of claim 10 wherein said outputting means includes a comparator that outputs a comparison signal to said digital-to-analog converter, said comparison signal being based on a comparison of said analog signal of said current pixel with an analog signal of an other previously processed pixel, said analog signal of said other

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previously processed pixel being an other image signal from said set of image signals, said high and low signals generated by said digital-to-analog converter being dependent on said comparison.

14. (Previously Presented) The system of claim 13 wherein said digital-to-analog converter is a ten bit digital-to-analog converter, and wherein said analog-to-digital converter is a six bit analog-to-digital converter.

15. (Previously Presented) The system of claim 9 further comprising a means for adding a conversion signal to said digitized signal, said conversion signal being a digitized image signal of said previously processed pixel.

16. (Original) The system of claim 9 wherein said analog-to-digital converter is a flash analog-to-digital converter.

17. (Currently Amended) A system for correcting erroneous image signals during analog-to digital conversion comprising:

a multi-color sensor array of photosensitive pixels, each pixel in the multi-color sensor array, the previously processed pixel having a single color designation, each of said photosensitive pixels being configured to accumulate an analog image signal when exposed to light to produce a set of analog image signals that represents a single captured image of a scene of interest; and

an analog-to-digital converter unit operatively coupled to said sensor array to receive said set of analog image signals from said photosensitive pixels, said analog-to-digital converter unit comprising:

a digital-to-analog converter that outputs a high signal and a low signal based on a digital image signal of a previously processed photosensitive pixel of the sensor array, said digital image signal of said previously processed pixel being an image signal derived from said set of analog image signals, said high signal and said low signal defining a signal range about said digital image signal of said previously processed pixel; and

an analog-to-digital converter having a high reference input and a low reference input to receive said high signal and said low signal, said analog-to-digital converter being configured to digitize an analog signal of a current photosensitive pixel of the sensor array, which has the same single color designation as the previously processed pixel, using said high and low signals as references to derive a digitized signal of said current pixel within said signal range such that said analog signal of said current pixel is limited, said analog signal of said current pixel being an other image signal from said set of analog image signals.

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18. (Original) The system of claim 17 wherein said digital-to-analog converter is configured to convert an input digital signal having more bits than said digitized signal of said current pixel.

19. (Previously Presented) The system of claim 17 wherein an analog-to-digital converter unit includes a comparator that outputs a comparison signal to said digital-to-analog converter, said comparison signal being based on a comparison of said analog signal of said current pixel with an analog signal of an other previously processed pixel, said analog signal of said other previously processed pixel being an other image signal from said set of analog image signals, said high and low signals being dependent on said comparison.

20. (Original) The system of claim 17 further comprising a means for adding a conversion signal to said digitized signal, said conversion signal being based on said low signal.

21. (Original) The system of claim 17 wherein said analog-to-digital converter is a flash analog-to-digital converter.